

ABSTRACTS

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SYPHILIS (General)

Reinfection in Syphilis. PEABODY, G. E., and WEBSTER, B. (1949). *Amer. J. Syph.*, 33, 334.

In determination of the effectiveness of antisyphilitic treatment and the incidence of relapse, reinfection must be more accurately assessed. Since 1932 at the New York Hospital there have been 140 examples of syphilitic reinfection or relapse among 128 patients. In each case the following factors were reviewed: time of infection, diagnosis, type and site of lesions, results of dark-field examination, serological reaction of blood and cerebrospinal fluid, contact investigation, total amount and type of drugs given, and results of follow-up study. Clinical experience indicated that reinoculation may occur while the serological reaction is still positive in blood and that a positive finding in the cerebrospinal fluid before the second infection implies relapse. The sum total of known evidence was taken into consideration in defining reinfection.

On these criteria, based on negative clinical and pathological findings beforehand, of the 140 cases of recurrent infection 82 were considered to be cases of reinfection, sixteen cases of probable or possible reinfection, and 42 cases of relapse. The results indicate that, whereas by previous standards most of the cases would have been classed as cases of relapse, only 30 per cent. of patients had actually relapsed. The percentage of relapse in cases treated previously with penicillin was 24.4 per cent., with "5-day drip" arsenotherapy 26.3 per cent. and with prolonged heavy metal and arsenotherapy 34.3 per cent. The figures suggest the comparative inefficiency of these antisyphilitic agents.

T. Anwyl-Davies

Circumcision and Venereal Disease. HAND, E. A. (1949). *Arch. Derm. Syph.*, Chicago, 60, 341.

The author studied this subject while working at the U.S. Naval Hospital, St. Albans, New York.

Of a group of 790 gentiles, 525 Jews, and 76 Negroes who had never had venereal disease it was found that 34 per cent. of the gentiles, 42.2 per cent. of the Negroes, and all the Jews except one were circumcised. It was

difficult to find many Negroes of military age without a history of venereal disease.

In a group of 522 gentiles, sixteen Jews, and 544 Negroes with a history of gonorrhoea, 23.6 per cent. of the gentiles, 100 per cent. of the Jews, and 13 per cent. of the Negroes were circumcised. The percentage of circumcised gentiles and Negroes was definitely lower in the group with gonorrhoea than in the group with no history of venereal disease. A striking fact in this group was the scarcity of Jews with venereal disease. The author suggests that they may have obtained treatment privately.

A group of 532 cases of syphilis was studied; 22.2 per cent. of the gentiles, 17.5 per cent. of the Negroes, and all the Jews were circumcised. Syphilis was certainly less common in circumcised gentiles and Negroes. This group was further subdivided into: (1) 358 patients with primary syphilis on the distal end of the penis, where the presence or absence of the prepuce could affect the acquisition of syphilis; (2) 88 patients with the primary lesion on the middle or upper portion of the shaft or some other part of the body, with secondary lesions; (3) 86 patients with no history of primary or secondary lesions. The first subgroup included 276 gentiles and 142 Negroes; 13.9 per cent. of the gentiles and 12.7 per cent. of the Negroes were circumcised. The second subgroup included 72 gentiles, two Jews, and fourteen Negroes; 47.3 per cent. of the gentiles, 29 per cent. of the Negroes, and all the Jews were circumcised. There is thus a greater percentage of circumcised in this group than in the group with primary sores on the distal end of the penis. In the third subgroup 21.4 per cent. of the gentiles, all the Jews, and 35.7 per cent. of the Negroes were circumcised. The author observes that the diagnosis of syphilis was made earlier and more easily in the circumcised, and in those cases the lesions were usually single while they were usually multiple in the uncircumcised. Mixed infection (chancre and chancroid) was much commoner in the uncircumcised.

Of 138 patients with chancroid 91.6 per cent. of the gentiles and 96.1 per cent. of the Negroes were uncircumcised. The chancroids were multiple in the uncircumcised and single in the circumcised. Lymphogranuloma venereum was seen in 26 gentiles and eighteen Negroes.

all uncircumcised. One case of granuloma inguinale was seen in an uncircumcised white person.

Of non-venereal infections, 22 cases of Vincent's balanitis were seen, all in uncircumcised persons. Verruca acuminata was seen in 41 gentiles and 21 Negroes: all but two were uncircumcised. Non-specific balanitis was not seen in the circumcised. Herpes progenitalis was seen in about the same proportion of circumcised and uncircumcised patients with or without venereal disease.

The author states that venereal disease is less likely in the circumcised, because of the physical and histological changes which occur on the distal end of the penis after circumcision.

H. S. Laird

Jaundice in Treated and Untreated Syphilis. (Zur Frage des Ikterus bei unbehandelter und behandelter Lues.) BRASS, K., and MOSER, P. (1949). *Dtsch. Arch. klin. Med.*, 196, 19.

In this article the classification of the forms of jaundice occurring in syphilis is considered in the light of liver biopsy findings. Older German authors described the following forms of jaundice in syphilis. (I) In untreated syphilis: (a) in congenital syphilis, caused by interstitial hepatitis; (b) "icterus syphiliticus praecox", occurring in about 1 per cent. of fresh adult infections. (II) In treated syphilis: (a) early jaundice ("Frühikterus") occurring with the first or second injection, often thought to represent a form of Herxheimer reaction; (b) jaundice beginning during treatment; (c) late jaundice ("Spätikterus"), occurring after long treatment or after its cessation. The authors' series of fifteen cases in which liver biopsy was carried out includes examples of all these groups except the first.

In most cases the histological picture was that of virus hepatitis. It is concluded that cases of "icterus syphiliticus praecox" and of "Frühikterus" are coincidental cases of catarrhal jaundice, possibly aggravated by syphilis or its treatment, and that later cases are examples of homologous serum jaundice. In three cases of "Spätikterus" the histology was different, with foci of acidophilic degeneration in the lobule peripheries and minimal connective-tissue reaction; it is thought possible that these cases represent a distinct condition. [Some advances in the study of the morphology of liver disease by biopsy have been made in Germany during the war, but the observations on aetiology in this article are based on a rather limited series of British and American references.]

Bernard Lennox

The Evolution of the Term Chancre and Its Relation to the History of Syphilis. KEIL, H. (1949). *J. Hist. Med.*, 4, 407.

The term "chancre" is usually applied to the primary lesion of syphilis. The older conception of "soft" chancre (chancroid) and "hard" chancre (syphilis) has given place to a more correct description since it has been found that the clinical significance of the terms "hard" and "soft" is not always justified. During the Middle

Ages, and for long after, French physicians applied the word "chancre" indiscriminately to any ulcerative lesion of the genital organs, having borrowed the word from the Latin *cancer*, which meant an ulcer, not necessarily malignant. Ambroise Paré is sometimes credited with having introduced the term chancre into medical literature, a statement questioned by the present author, who attributes it to earlier surgeons. For a long period there was much confusion, not only between cancer and chancre, but between the several varieties of venereal disease. The earliest use of the word "chancre" in English is to be found in the translation of Nicolas de Blegny's treatise on venereal disease (1676). In eighteenth century works the word was freely used and John Hunter's celebrated description led to the adoption of the name "Hunterian chancre". Nevertheless the nomenclature remained vague until the discovery of the bacterial cause of each disease led to the clear separation of venereal diseases. The gonococcus was discovered in 1879, Ducrey's bacillus in 1889, and *Spirochaeta (Treponema) pallida* in 1905. Chancre then became the clear-cut name of the primary syphilitic lesion.

Douglas Guthrie

Reinfection and. Relapse After Treatment of Early Syphilis with Penicillin. Analysis of One Hundred and Thirty-seven Cases of "Infectious Failure" in a Total Series of 1,105 Cases. SCHOCH, A. G., and ALEXANDER, L. J. (1949). *Arch. Derm. Syph., Chicago*, 60, 690.

These authors studied the cases of 1,105 patients with early syphilis treated according to five different schedules, including administration of from 300,000 to 4,800,000 units of penicillin with or without bismuth and "mapharsen", and observed for periods of from 9 months to 3 years; in 137 (12.4 per cent.) cases there was infectious relapse ("infectious failure") and of these eighty (7.24 per cent.) were considered to be reinfections and 57 (5.16 per cent.) to be relapses. The diagnosis of reinfection was made on the sum of all the evidence, epidemiological, clinical, and serological; this evidence included such facts as recent contact with an infectious person, a slow gradual rise in reagin titre, appearance of clinical signs more than a year after the original treatment, and satisfactory response to the same treatment as appeared to cure the original infection. Relapse nearly always occurs within the first year of observation, reagin titre rises rapidly, and secondary lesions may occur without any primary ones. Reinfection was found to be more common after primary than after secondary syphilis [presumably because less immunity had developed after the former]. Four cases are described in detail, one of certain and one of probable reinfection, and one of certain and one of probable relapse.

[The differentiation between these two categories seems to depend very largely on epidemiological data which have little value when the patient is habitually promiscuous. The arguments set out are specious but not altogether convincing and few will regard the problem as solved.]

T. E. Osmond

Treponemal Immobilization Test of Normal and Syphilitic Serums. MAGNUSON, H. J., and THOMPSON, F. A. (1949). *J. vener. Dis. Inform.*, **30**, 309.

Until 1949 when the work of Nelson and Mayer made available an *in vitro* method for immobilizing antibodies against *Treponema pallidum*, only *in vivo* tests were of practical value. In the present investigation this new treponemal immobilization test was confirmed on 362 patients with syphilis, 81 with other diseases, 73 normal human subjects, and 91 normal rabbits. No positive tests were encountered in any of the non-syphilitic cases.

To avoid the waste of scarce materials, the assays were not performed with the volumes advocated by Nelson and Mayer, but serum to be tested was heated at 56° C. for one-half hour, and 0.05 ml. was placed in a Wassermann tube, 0.1 ml. of complement, diluted 1 in 4 in Nelson's medium, and 0.3 ml. of the spirochætal emulsion made from the infected rabbits' testes being added. Mixtures were incubated for 16 hours at 35° C., platinum loopfuls (taken from the test-tubes in random order in a test-tube rack) were placed on a slide under a coverslip, and the percentage of mobile organisms in the first 25 spirochætes was calculated. The result was considered positive if the figure was at least 40 per cent. below that of the control tube containing the same serum and an equal amount of heat-inactivated complement. Results between 30 per cent. and 40 per cent. were considered doubtful, and less than 30 per cent. negative. When less than 50 per cent. of the organisms in both tubes or in the tube containing inactive complement were living, the result was considered non-specific.

The immobilizing antibody is similar to, if not identical with, the antibodies developed in both experimental and human syphilis. It develops fairly early in the course of the disease, and the percentage of positive immobilization reactions increases with the duration of the disease. Ten of the 22 cases of primary syphilis, 156 of 189 cases of secondary syphilis, and 105 of 106 cases of early latent syphilis gave positive results. Sera from all patients in later stages of syphilis consistently gave a positive result.

The immobilizing substance is associated with the globulin fractions of serum protein and is only partially removed in the euglobulin fraction. The test may assist in the differentiation of false-positive serological tests and in problems of syphilitic immunity but it can only be performed in well-equipped research laboratories.

T. Anwyl-Davies

Hyaluronidase and Experimental Syphilis.

I. The Length of Incubation Periods in Experimental Primary Syphilis with and without Hyaluronidase. SCOTT, V., and DROEGMUELLER, C. (1950). *Amer. J. Syph.*, **34**, 1.

II. The Attempted Localization of Lesions in Syphilitic Rabbits by Intradermal and by Intracorneal Injections of Hyaluronidase. A Negative Report. SCOTT, V. (1950). *Amer. J. Syph.*, **34**, 12.

The Effect of the Method of Inoculation Upon the Course of Experimental Syphilis in the Rabbit. CHESNEY, A. M., and SCHIPPER, G. J. (1950). *Amer. J. Syph.*, **34**, 18.

The Effect of the Method of Inoculation on the Behaviour of the Serologic Test for Syphilis in Experimental Syphilis of the Rabbit. SCHIPPER, G. J., and CHESNEY, A. M. (1950). *Amer. J. Syph.*, **34**, 25.

Experimental Mouse Syphilis. II. Minimal Infectious Number of *Treponema pallidum*. ROSAHN, P. D., and ROWE, C. L. (1950). *Amer. J. Syph.*, **34**, 40.

SYPHILIS (Therapy)

Abortive Treatment of Syphilis. Results Obtained in the Incubation, Primary, and Secondary Stages of Syphilis. ALEXANDER, L. J., SCHOCH, A. G., and MANTOOTH, W. B. (1949). *Amer. J. Syph.*, **33**, 429.

A series of 148 persons who had been exposed to early contagious syphilis were given 9,000 units of calcium penicillin in oil and beeswax and 3 ml. of bismuth ethyl camphorate (120 mg. of elemental bismuth) intramuscularly, and 0.05 to 0.06 g. of oxophenarsine intravenously at a single clinic visit as abortive therapy, while 108 were given penicillin and bismuth only. Of the 256 patients so treated, fourteen subsequently showed signs of early syphilis—one of them on two occasions. The authors believe that the evidence is in favour of reinfection having occurred in these fourteen cases. In a control group of 161 untreated contacts, 100 (62.1 per cent. developed syphilis. Abortive treatment with penicillin and bismuth (arsenic having proved unnecessary) in the incubation stage of syphilis thus appears to offer nearly 100 per cent. protection. Preliminary observations on patients with early syphilis treated in the same way indicate results probably equal to any so far reported with penicillin.

James Marshall

Treatment of Syphilis by Oral Use of Aureomycin. O'LEARY, P. A. (1949). *J. Okla. med. Ass.*, **42**, 315.

This preliminary report shows that aureomycin has a satisfactory therapeutic effect on syphilis. It was given to patients orally in a dose of 4 g. daily to a total of from 44 to 90.5 g., a minimum of 60 g. being given within a period of 12 to 15 days. With this schedule satisfactory levels were maintained in the serum (2 to 4 µg. per ml.) and in the cerebrospinal fluid (0.06 to 1.25 µg. per ml.) Aureomycin was recovered from the blood of a newborn infant whose mother had been given aureomycin before delivery.

Results in cases of early syphilis and in those with late cutaneous lesions were satisfactory but less so in cases of neurosyphilis. In two cases of early syphilis, *Treponema pallidum* disappeared from the chancre in 60 hours and the blood reaction became negative within 4 months. In two patients with late cutaneous gummas, the lesions responded as rapidly as did similar lesions treated by heavy metals or penicillin.

The reactions consisted of nausea, vomiting, and diarrhoea, but no evidence of sensitivity was obtained.

Although the drug is only mildly toxic, it is questionable whether its use may be justifiably classed as satisfactory, for the oral administration of a drug is not the ideal method of treating patients with syphilis.

T. Anwyl-Davies

Effect of Chloramphenicol in Early Syphilis. ROBINSON, R. C. V., FOX, L. M., and DUVALL, R. C. (1949). *Amer. J. Syph.*, **33**, 509.

Chloramphenicol in saline in final dilutions of 100, 10, 1, 0.1, and 0.01 mg. per ml. had no immobilizing effect upon a suspension of virulent *Treponema pallidum*. Serum from blood withdrawn from one of the authors 3, 9, and 27 hours after the ingestion of 2 g. of chloramphenicol was also found to be devoid of immobilizing effect. It is therefore concluded that the drug is not directly treponemicidal.

In a clinical study, seventeen patients with open lesions of early syphilis, in which *T. pallidum* had been demonstrated, were treated with 1 g. of chloramphenicol every 6 hours to a total dose of 40 g. in 10 days. The average time in which the lesions became negative to dark-field examination was 33.4 hours. The initiation of healing was apparent in an average time of 36 hours. Four patients developed stomatitis between the 5th and 10th days, two developed a papular eruption on the 5th day, and others complained of diarrhoea. Thus although the drug was found to be ineffective *in vitro*, there was some beneficial effect on clinical lesions. It is suggested that chloromycetin is treponemostatic rather than treponemicidal.

V. E. Lloyd

Results of a 10- to 15-Year Follow-up of 475 Patients Treated for Primary and Secondary Syphilis with Neoarsphenamine and Bismuth Between 1932 and 1937. (Resultate der Nachuntersuchungen von 475 vor 10-15 Jahren (1932-1937) wegen Lues I und II mit Neoarsphenamin-Bismut behandelten Patienten.) BURCKHARDT, W. (1949). *Dermatologica, Basel*, **99**, 273.

In 90 per cent. of the patients described no clinical or serological evidence of syphilis was found. Of the series 3 per cent. had as only abnormality a positive blood reaction; 2 per cent. had asymptomatic neurosyphilis (abnormal spinal fluid without neurological manifestations), and 4.5 per cent. appeared to have clinical relapses, including symptomatic neurosyphilis and cardiovascular syphilis. Of those who had received only 6 to 12 g. neoarsphenamine, 85 per cent. were "cured". Of those receiving more, 90 per cent. were "cured". An interesting observation is that all the cases of symptomatic and asymptomatic neurosyphilis were serum-negative after their initial course of treatment. Five patients died from the toxic effects of neoarsphenamine and 38 per cent. of the total showed some side-effects of treatment, mostly of a minor nature.

G. W. Csonka

Studies on Chloramphenicol in Early Syphilis and Gonorrhoea. Preliminary Report. ROBINSON, H. M., and ROBINSON, H. M., Jr. (1949). *Sth. med. J.*, **42**, 988.

The authors report the treatment with chloramphenicol of thirteen male patients, whose ages ranged from 21 to

41 years, with gonorrhoea, confirmed by smears and cultures. Seven patients had an initial dose of 2 g. of chloramphenicol, followed by two doses of 1 g. at 4-hourly intervals; in five cases the discharge stopped and smears and cultures became negative after 48 hours, and in the remaining two cases a similar result followed a further dose of 3 g. Three others had an initial dose of 3 g. of chloramphenicol, followed by two doses of 1 g., at 4-hourly intervals, while the remaining three patients had a single dose of 3 g. In all six the discharge stopped in 24 hours, and smears and cultures were negative. In addition, five patients with early lesions of syphilis, positive on dark-ground examination, were treated with chloramphenicol, the total dosage ranging from 3 g. to 48 g. The treponemata disappeared from the lesions after 3 to 5.5 g. had been given, in 24 to 48 hours. The only reaction to the drug was in one patient who complained of a bitter taste and loss of appetite, the symptoms subsiding 3 days after completion of treatment. It is pointed out that, since chloramphenicol masks the symptoms of syphilis, patients treated with the drug for gonorrhoea should be followed up and serological tests for syphilis carried out.

T. E. C. Early

The Antitreponemal Effect of Oral Chloromycetin in 32 Cases of Early Syphilis in Man—A Preliminary Report. ROMANSKY, M. J., OLANSKY, S., TAGGART, S. R., and ROBIN, E. D. (1949). *Science*, **110**, 639.

The authors treated 32 patients with early syphilis, confirmed by dark-field examination, with 8 to 56 g. of chloramphenicol given by mouth, usually in equal doses at 4-hourly intervals over a period of 4 to 6 days. Thirteen of the patients had secondary, and the remainder primary syphilis. The dark-field examination became negative within 22 to 28 hours of starting treatment and the healing of the lesions was prompt. Serological tests on fifteen of the patients were positive before treatment; one month after completing treatment the reaction had become negative in one of these cases and was less strongly positive in the others. Nine of these patients were again tested after a further month, when the reaction in two others had become negative and improvement was maintained in the remainder. The observation is made that chloramphenicol appears to promote healing by a different mechanism from that of penicillin, the process being initiated from the base as opposed to the periphery of the lesions.

R. R. Willcox

The Influence of Subcurative Doses of Penicillin on the Course of Early Syphilis. (Der Einfluss subkurativer Penicillindosen auf den Ablauf der Frühsyphilis.) STREITMANN, B. (1949). *Wien. klin. Wschr.*, **61**, 919.

A series of seven female patients with gonorrhoea were given 100,000 units of penicillin intramuscularly and later developed a positive Wassermann reaction, with or without atypical manifestations of syphilis. In six cases syphilis was clinically or serologically manifest within 2 months of giving penicillin. In the seventh case the patient was not seen for 7 months after the penicillin had been given and therefore the time-relationship could not be ascertained. The author suggests that subcurative

doses of penicillin may suppress or delay the development of syphilis and, in particular, may be responsible for a symptomless stage of early syphilis. The importance of carrying out a clinical and serological follow-up of patients treated with small doses of penicillin, especially for gonorrhœa, is emphasized.

G. W. Csonka

Penicillin in Oil with Aluminium Monostearate: Its Effect on Prolonging Blood Concentrations of Penicillin and a Preliminary Report of its Use in the Treatment of Syphilis. TAGGART, S. R., HENDRICKS, F. D., CHANDLER, V. L., WELCH, H., HARLEY, D. H., and OLANSKY, S. (1949). *Amer. J. Syph.*, 33, 515.

The blood penicillin concentration was assayed after the administration of micronized and non-micronized procaine penicillin G in oil with 2 per cent. aluminium monostearate in 147 cases of early syphilis. Doses varying from 1.5 to 2.4 mega units were injected into one or both buttocks and assays were carried out by the *Bacillus subtilis* method each day for 10 days. Measurable concentrations of penicillin were found in the blood up to 7 to 9 days after the injection, tending to persist for a slightly longer period with the micronized form of penicillin than with the non-micronized form. The concentration showed some variation from day to day, and in some cases penicillin could not be detected for a day or two although measurable concentrations appeared later.

Although the volume of injected material was as much as 10 ml. in some instances, little pain or discomfort was reported. Febrile Herxheimer reactions were noted in twelve out of 97 cases. One patient developed eczema on the 12th day, and another œdema of the extremities on the 9th day. Serological tests 6 months later were negative in seventeen out of 25 cases.

V. E. Lloyd

Experiences with Single and Multiple Treatment Schedules of Early Syphilis with Procaine Penicillin in Oil and Aluminium Monostearate. THOMAS, E. W., REIN, C. R., and KITCHEN, D. K. (1949). *Amer. J. Syph.*, 33, 523.

The blood penicillin concentration was studied in a series of 160 cases of early syphilis treated with fine-particle procaine penicillin suspended in oil with aluminium stearate, given in a single dose or by injection once a week. Daily blood penicillin assays showed a concentration of more than 0.03 units of penicillin per ml. of serum for nearly 8 days after the injection of 1.2 mega units, and for nearly 9 days after the injection of 2.4 mega units. The serological tests for syphilis were negative at the 9th month after treatment in 41 out of 124 cases and showed improvement in eighty. The incidence of local and general reactions was very low.

V. E. Lloyd

Neurosyphilis III. Evaluation after Three Years of Treatment with Penicillin Alone and with a Combination of Penicillin and Malaria. CURTIS, A. C., KRUSE, W. T., and NORTON, D. H. (1949). *Amer. J. Syph.*, 33, 527.

The results, 1 to 3 years after treatment with penicillin and malaria, in 380 cases of neurosyphilis are here

reported. All patients received a total dosage of 4 mega units of penicillin in water, and about one-half of the series also received malarial therapy (50 hours or more of fever above 103.5° F. (39.7° C.)). The results of clinical and cerebrospinal-fluid examination are set out in statistical and tabular form. The response in various types of neurosyphilis, including tabes and paresis, was equally good to penicillin alone and to the combined therapy.

V. E. Lloyd

Effect of Five Years of Penicillin Alone on Neurosyphilis. Including Some Comparisons with Prepenicillin Methods. STOKES, J. H., and GAMMON, G. D. (1949). *Amer. J. Syph.*, 33, 537.

A report of 5 years' experience of penicillin therapy in some 300 cases of neurosyphilis of various types is presented in detail. It includes details of 29 of the original 39 cases treated 5 years previously, in 22 of which a normal or nearly normal cerebrospinal fluid has been achieved.

Among their conclusions the authors mention that (1) in meningovascular syphilis the long-term spinal-fluid result is slightly poorer than in any other type; (2) serological cure may be obtained without clinical improvement and vice versa; (3) improvement of optic atrophy is a possibility after repeated courses of penicillin therapy; and (4) higher penicillin dosage (9.6 mega units) appears to have some advantage over lower dosage (4.8 mega units).

A pilot study of 51 cases of neurosyphilis treated in the pre-penicillin period indicated that very little treatment with arsphenamine and bismuth may be effective. It is suggested that penicillin, like the older remedies, tips the balance between the patient's defence and the disease, and that the amount of treatment needed to accomplish this is not clearly predictable, even from spinal-fluid observations.

V. E. Lloyd

Penicillin in the Treatment of Early Syphilis: 639 Patients Treated with 2,400,000 Units of Sodium Penicillin in 7½ days. BUNDESEN, H. N., PLOTKE, F., SCHWEMLEIN, G. X., and RODRIGUEZ, J. (1949). *J. vener. Dis. Inform.*, 30, 321.

This investigation reveals that giving 2,400,000 units of penicillin in aqueous solution by sixty intramuscular injections, 40,000 units intramuscularly every 3 hours for 7½ days, is inadequate treatment for primary and secondary syphilis. This dosage was given to 639 patients who were then observed, without further treatment unless clinical or serological relapse intervened, for 24 to 27 months. There were 92 (14.4 per cent.) with primary serum-negative syphilis, 179 (28 per cent.) with primary serum-positive syphilis, 266 (41.6 per cent.) with secondary syphilis, and 102 (16 per cent.) with relapsing early syphilis. The failure rates at the end of 2 years in the above classes were 23.2 per cent., 26.9 per cent., 37.5 per cent., and 33.6 per cent. respectively. The over-all failure rate, regardless of diagnosis, was 32.2 per cent. after 27 months' observation.

Attempts at shortening the treatment period to 24

hours and increasing the dose of penicillin to 10, 15, 20, and 25 million units were no more successful.

T. Anwyl-Davies

Penicillin Treatment of Early Syphilis—First Four Patients After Six Years. MAHONEY, J. F., ARNOLD, R. C., and HARRIS, A. (1949). *J. vener. Dis. Inform.*, **30**, 350.

It is now more than 6 years since Mahoney and his colleagues made a preliminary report on the results of treating with penicillin four young seamen with early dark-field-positive syphilis. Three of these patients were given 48 injections of 25,000 units of penicillin at 4-hour intervals, and the fourth 85 similar injections. In one of the former gonorrhœa developed 273 days after treatment and he was given more penicillin (? 100,000 units). Thirty days later a dark-field-positive lesion appeared on the lower lip with a return of serum reactions to positive. Reinfection was diagnosed and he was re-treated with 60 3-hourly injections of 40,000 units of penicillin 318 days after his original treatment. It is of interest that this patient, a Negro, had acquired gonorrhœal infection (apparently treated with penicillin) 13 times by the 52nd post-treatment month.

Though the follow-up study of these patients was not so regular as might be desired, all four were recently brought under observation, when their clinical and serological condition, as well as that of the spinal fluid, was found to be completely normal. The authors consider that their apparent haste in using penicillin in human syphilis before its complete assay in the animal has been amply justified and they plead for more frequent pilot studies in human beings in those cases where the product under scrutiny is known to be non-toxic and in which its trial would not jeopardize the chance of success of orthodox therapy should the experimental methods fail.

G. L. M. McElligott

Treatment of Syphilis with Penicillin Injection in Oil and Wax U.S.P. Analysis of One Hundred and Fifty-three Cases. RAUSCHKOLB, J. E., and COLE, H. N. (1949). *Arch. Derm. Syph., Chicago*, **60**, 676.

These authors treated 175 patients suffering from early syphilis with 600,000 units of penicillin in oil-wax daily for 8 days. Of the 175 patients the records of 116 were analysed; the latter included fifty with primary (ten serum-negative and forty serum-positive), 57 with secondary, and nine with early latent syphilis; the large majority of the patients were male Negroes. In all cases examination of the cerebrospinal fluid was carried out; in all ten serum-negative cases fluid was normal; fluid in four of the forty with serum-positive primary, nineteen of the 57 with secondary, and two of the nine with early latent syphilis showed abnormalities. As a result of the treatment surface lesions healed promptly, usually within 8 days, and spirochaetes disappeared within 24 hours.

Follow-up consisted of monthly clinical examination and quantitative blood tests. Results were as follows: in nine of the ten serum-negative cases the reaction remained negative; of 32 cases of serum-positive

primary syphilis 24 became serum-negative by the end of the 7th month and eight remained positive. Of the fifty primary cases, nine (one serum-negative and eight serum-positive) relapsed or were reinfected. Of the 57 secondary cases seventeen became serum-negative within 10 months, nineteen remained serum-positive, and 21 relapsed. Of the nine early latent cases three remained serum-positive and six relapsed; the total relapse rate was therefore 31.03 per cent.; relapse included clinical relapse (55.5 per cent.), serological relapse (13.5 per cent.), serological resistance (30.5 per cent.) and reinfection (one patient only).

[It is difficult to understand the recording of quantitative serum tests in terms such as "had a dilution of 1: 8 (2 Kahn units)"; Kahn himself reckons the number of units as 4 times the highest dilution which gives a positive reaction, for example, "positive in a dilution of 1 in 8 would mean $8 \times 4 = 32$ Kahn units.]

T. E. Osmond

Treatment of Early Syphilis with Penicillin. BARTON, R. L., BAUER, T. J., CRAIG, R. M., and SCHWEMLEIN, G. X. (1949). *Arch. Derm. Syph., Chicago*, **60**, 150.

The authors report the treatment at the Chicago intensive treatment centre of 324 patients suffering from early syphilis with a total dosage of 1,200,000 units of aqueous penicillin given as intramuscular injections of 20,000 units every 3 hours over a period of $7\frac{1}{2}$ days, the patients being subsequently observed for from 16 to 23 months. Of the 324 patients, all were previously untreated, except 67 who had had various amounts of metal, penicillin, or fever therapy. The cases were grouped as follows: primary serum-negative 36, primary serum-positive 69, secondary 176, and relapsing 43; nineteen of the patients were said to be suffering from reinfections [though as the authors say that reinfection cannot be distinguished from relapse it is not clear how this figure was arrived at]. The cumulative percentage failure rates were: primary serum-negative 10.6, primary serum-positive 21.9, secondary 35.7, and relapsing 37.5; the over-all failure rate at the end of one year was 29.6 per cent. Cerebrospinal fluid examinations were carried out on 314 patients before treatment. The fluid in 66 cases was of group I, and in seven of group II; 27 of these 73 patients were re-examined after 6 and 12 months when the fluid in seven was normal, of group I in six, and of group III in four.

Treatment was a failure in sixty patients, of whom three had relapsing primary, seven late primary, and 21 relapsing secondary syphilis, while in 29 the relapse was serological. The cerebrospinal fluid was abnormal before treatment in sixteen of the sixty, while of 38 patients whose fluid was normal before treatment, one had group I, two had group II, and one group III fluid at the time of re-examination. There were no serious reactions to treatment. This investigation was carried out between December, 1944, and July, 1945, and it is pointed out that at this time the relative amounts of fractions G, F, and K in commercial penicillin varied a good deal.

T. E. Osmond

Studies on the Effect of Aureomycin on *Treponema pallidum*. WIGGALL, R. H., ZHEUTLIN, H. E. C., TRICE, E. R., ELMENDORF, D. F., and ROBINSON, R. C. V. (1949). *Amer. J. Syph.*, 33, 416.

Aureomycin administered intramuscularly to rabbits in total doses of 30, 100, and 200 mg. per kg. body weight produced, in 48 hours, a decrease of 50 to 90 per cent. in the number of treponemata in the serum expressed from induced cutaneous syphilomata. Healing was complete in 10 days. In doses of 12.5, 25, and 50 mg. per kg. twice daily for 8- and 10-day periods, aureomycin prevented the development of orchitis following intratesticular inoculation of an emulsion of *Treponema pallidum*. Oral aureomycin in doses of 2 to 4 g. daily caused the disappearance of *T. pallidum* from the lesions of early syphilis in four of nine patients observed for 48 hours, and in all of six cases observed for 72 hours. Local healing occurred after 144 hours in two of six patients. Reactions were minimal, consisting of diarrhoea (or a relative increase in number of stools) and nausea, and interruption of treatment was never necessary.

James Marshall

The Validity of Withholding Treatment in the Presence of Dattner-Thomas Formula in the Spinal Fluid. HORNE, S. F. (1949). *Amer. J. Syph.*, 33, 454.

According to Dattner, Thomas, and others an "inactive" syphilitic cerebrospinal fluid is one showing no abnormality except a positive complement-fixation test in low titre (10 units or less) in a patient whose disease is more than 5 years old and who has had no treatment for at least 6 months. Eleven patients fulfilling these criteria were treated with penicillin alone or penicillin and malaria. One patient had shown rapid progression of parietic symptoms in the presence of an "inactive" fluid. In ten cases there was subjective or objective clinical improvement and the fluid became completely normal in four. While the cerebrospinal fluid cell count and total protein estimation are the most reliable guides to determination of activity in neurosyphilis, progression of the disease may occur when both are within normal limits. The validity of withholding treatment from patients with abnormalities of the Dattner-Thomas type formula is therefore open to question.

James Marshall

Penicillin and Penicillin-Malaria in the Treatment of *Tabes Dorsalis*. PACKER, H., and WONG, Y. T. (1949). *Ann. intern. Med.*, 31, 96.

The clinical and serological phenomena of *tabes dorsalis* are both capable of considerable improvement by a course of treatment combining penicillin and malaria. In certain elderly and debilitated patients malaria may do more harm than good, and a short series of cases shows that penicillin alone is probably just as effective as the combined treatment. When, however, there are rapidly advancing optic neuritis and intractable gastric crises the combination of penicillin and malaria may prove superior to penicillin alone.

G. F. Walker

Semiweekly Treatment of Syphilis with Procaine Penicillin in Oil. Reactions and Preliminary Results in 228 Patients. SCOTT, V. (1949). *J. Lab. clin. Med.*, 34, 998.

The preliminary results of administering procaine penicillin in oil, twice a week to 228 patients for the ambulatory treatment of syphilis are recorded. Procaine penicillin (90 per cent. penicillin G) suspended in sesame oil was given twice a week because it maintained a close concentration of penicillin in the blood serum over a long period (48 hours) of time. Two schedules of treatment were adopted, 600,000 units being given intramuscularly twice a week for 7½ weeks (total dose, 9 million units), or, in cases of more serious late forms of syphilis, for 10 weeks (12 million units).

Approximately 3,500 injections were given but no signs of chronic procaine toxicity appeared; one case of suspected procaine intolerance, accompanied by dyspnoea, tachycardia, and generalized numbness, was observed. The incidence (2.5 per cent. of pruritic eruptions due to penicillin was less in the author's experience than with penicillin in peanut oil and wax (5 per cent.).

The lesions of early syphilis resolved promptly and *Treponema pallidum* disappeared from lesions within 24 hours, but evaluation of the serological response in blood and in cerebrospinal fluid will require more prolonged observation. The author expects procaine penicillin in oil to be at least as effective, both clinically and serologically, as penicillin in oil and wax.

T. Anwyl-Davies

Penicillin in the Abortive Treatment of Syphilis. PLOTKE, F., EISENBERG, H., BAKER, A. H., and LAUGHLIN, M. E. (1949). *J. vener. Dis. Inform.*, 30, 252.

The authors report on 1,069 contacts of patients with primary or secondary syphilis, exposure having occurred within 3 months and 5 months respectively; 927 of these were excluded for various reasons and the remaining 142 were studied. Of the 142, 71 were males and 71 females; fifty had had contact with patients with primary syphilis and 92 with patients with secondary syphilis; 77 of the 142 were given abortive treatment and 65 were left untreated as controls. Abortive treatment consisted of a single injection of 600,000 units of penicillin in oil and wax. In the control group fifteen out of 65 developed syphilis, and in the treated group three out of 77 developed syphilis; in the control group the median period between exposure to infection and the appearance of the first signs of syphilis was 66 days; in the treated group this period was nearly twice as long, presumably because of the effect of the penicillin.

These results are compared with those of another investigation in which the abortive treatment consisted of administration of 900,000 units of calcium penicillin in oil and wax, 120 mg. of bismuth and 0.05 to 0.06 g. of oxophenarsine; in this, six out of 115 treated persons and 75 out of 130 untreated persons subsequently developed syphilis. [The chances of contracting syphilis from intercourse with an infected person thus varied from one in two to one in four in the two series, a considerable difference.]

T. E. Osmond

Penicillin Therapy of Cardiovascular Syphilis. FLAUM, G., and THOMAS, E. W. (1949). *Amer. Heart J.*, 38, 361.

Because of the danger of Jarisch-Herxheimer reactions extreme caution is urged in the treatment of patients with cardiovascular syphilis by some authorities. In the experience of the authors this danger has been over-emphasized. Fifty patients with aortic insufficiency and ten with aortic aneurysm were treated with penicillin in full doses and no untoward reactions were encountered. The penicillin was given in doses of 30,000 to 50,000 units every 3 hours until 3 to 6 million units had been given. If the patients had had no previous antisyphilitic treatment 3 injections of 0.2 g. of bismuth subsalicylate at intervals of 5 days were given before starting penicillin treatment. For a variety of reasons, however, not all patients received this preliminary treatment.

H. E. Holling

Penicillin in the Treatment of Pre-natal Syphilis. MORGAN, E. A. (1949). *Canad. med. Ass. J.*, 61, 275.

From 1945 to 1949 at the Hospital for Sick Children, Toronto, 54 infants were treated for congenital syphilis: 32 with penicillin alone, nine with penicillin combined with "stovarsol", and thirteen with stovarsol alone. Larger doses of penicillin were given than those usually advised: seven infants received a total dose of 50,000 to 100,000 units per lb. (0.45 kg.), nineteen received 100,000 to 200,000 units per lb., and seven cases received over 200,000 units per lb. The average dose was 138,000 and the largest 550,000 units per lb. Infants suffering from an intercurrent infection were given the full dose at once, as the danger from an uncontrolled bronchopneumonia outweighs that of a possible Herxheimer reaction, and this dose was continued daily for 10 to 14 days. The dose of stovarsol was one-half tablet (0.25 g.) daily for the first week, twice a day for the second week, and then three times a day until the Wassermann reaction of the blood had been negative for one month. Pyrexia, not depending on the size of the dose, followed the initial injection of penicillin in one-third of the cases.

If four infants who died before treatment could be given were omitted, the death rate was 9 per cent. Of the 41 infants treated with penicillin alone and with penicillin-stovarsol three died, a mortality rate of 7 per cent. Of those treated with stovarsol two (16.6 per cent.) died. Of the nine deaths, seven were from bronchopneumonia, one from hæmolytic anaemia, and one from a possible Herxheimer reaction. The serum reaction in all but four of the 38 infants who survived became negative in an average period of 5 months. Signs of the disease disappeared with equal rapidity with both forms of treatment, the eruption in 8 days, rhinitis in 2 to 4 weeks, and osteochondritis in 3 to 5 months.

The author concludes that in the early stages penicillin treatment is superior to any other form, and the younger the child the more striking the response to treatment; but in the older child, penicillin treatment followed by the use of arsenic and heavy metals shortens the time required to affect the serological reaction.

T. Anwyl-Davies

Fatal Jarisch-Herxheimer Reaction with Sudden Aneurysmal Dilatation and Complete Bronchial Occlusion following Penicillin Therapy. DIEFENBACH, W. C. L. (1949). *New Engl. J. Med.*, 241, 95.

A Jarisch-Herxheimer reaction with fatal outcome, due to sudden aneurysmal dilatation with complete bronchial occlusion and massive collapse of the lung, is reported after penicillin therapy. A 75-year-old Negro was admitted to hospital for pneumonia. Radiological examination revealed an area of consolidation in the right upper lobe of the lung and some enlargement of the aorta containing areas of calcification suggestive of aneurysm. The blood Wassermann reaction was strongly positive. On the third day after aqueous penicillin injections, 100,000 units 3-hourly, dyspnoea ensued and the trachea was found to be deviated to the left; breath sounds were absent on the left side of the chest. Radiological examination showed that areas of increased density had developed throughout the left lung, with shifting of the mediastinum to the left consistent with atelectasis. Bronchoscopy revealed complete occlusion of the left bronchus. The patient's condition became steadily worse on the 58th day after admission. At necropsy a large saccular aneurysm of the arch and descending aorta containing a large clot was found, with collapse of the left lung.

The author considers the sudden increase in the size of the aneurysm to be due to a focal Jarisch-Herxheimer reaction, and suggests that caution be exercised in the penicillin treatment of elderly patients. V. E. Lloyd

Penicillin Treatment of Late Neurosyphilis—One- to Five-year Follow-up with Special Reference to Clinical Failures. LANDAU, D., KOPP, I., ROSE, A. S., and SOLOMON, H. C. (1949). *Amer. J. Syph.*, 33, 357.

In the 5-year period 1944-49, the authors treated 446 cases of neurosyphilis at the Boston Psychopathic Hospital with penicillin (3 to 6 million units over a period of 5 to 15 days). Most of the patients were paretics and these also received malaria or artificial pyrexia treatment in a course of approximately one-half the usually accepted intensity. Of those treated 72 per cent. are now at home and working; 12 per cent are dead, but in only 4 per cent. of the total could death be attributed to the syphilitic process.

Analysis of the results of treatment in 233 psychotic patients indicates that in psychoses of the affective types the prognosis is excellent, all patients improving after treatment, that in the demented group prognosis is fair, 67 per cent. being improved, whereas of the schizoid types only 25 per cent were benefited by treatment. The cerebrospinal fluid in all types showed the usual pattern of improvement.

The authors being in favour of dual therapy, no attempt is made to compare penicillin treatment with fever therapy. They also consider that lack of clinical improvement after treatment is more likely to be due to the residuum of neural damage or to the persistence of an established psychosis than to an enduring active infection.

G. L. M. McElligott

Aureomycin and its Effect in Early Stages of Syphilis. A Preliminary Report. RODRIGUEZ, J., PLOTKE, F., WEINSTEIN, S., and HARRIS, W. W. (1949). *J. Amer. med. Ass.*, **141**, 771.

Following the discovery by o'Leary, Kierland, and Herrell that oral aureomycin appears to have some antispirochaetal activity in early syphilis, the authors used this drug to treat 27 patients with early dark-field-positive syphilis, 21 of whom were in the secondary stage. An initial dose of 2 g. (eight capsules of 250 mg. each) was given, and this dose was repeated 4 hours later; then 1 g. was given every 4 hours day and night until a total of 70 g. had been reached in a little over 11 days. Dark-field studies were carried out in seventeen cases, surface lesions becoming negative in 17 hours in three cases and in 65 hours in two cases, the average time for the group being 39 hours. In every instance open lesions healed completely but healing seemed to be more prolonged than after treatment with tervalent arsenicals or intramuscular use of aqueous penicillin.

Levels of aureomycin in blood were studied hourly for 6 hours in seven cases after one oral dose of 2 g. of aureomycin, and also at the 8th and 10th hours. In six additional cases levels were estimated at the 16th, 18th, and 24th hours. An average peak concentration of 2.63 µg. per ml. of blood was found at the 4th hour, the level gradually falling thereafter. The individual curve of level in blood describes a series of terraces, in contrast to the spiking curve observed after aqueous penicillin. No aureomycin was detected in the cerebrospinal fluid of four patients in the 1st, 6th, or 9th hours.

Follow-up of eighteen patients for 8 weeks showed a definite trend towards serum-negativity in most [the authors justly add that it is too early to say more than this]. Mild to moderate gastro-intestinal upset, often with vomiting, occurred in almost all cases and in four of them there was a febrile reaction thought to be a Herxheimer manifestation. *G. L. M. McElligott*

Treatment of Neurosyphilis with Penicillin combined with Artificial Fever. EPSTEIN, N. N., and KEY, J. M. (1949). *Arch. Derm. Syph.*, Chicago, **60**, 543.

In 87 patients various forms of neurosyphilis were treated with a combination of penicillin and fever therapy, the latter being given by the blanket method. The response in cases of general paresis and meningovascular syphilis was satisfactory. There was little change in tabes dorsalis. Definite improvement was detectable in 70 per cent. of all specimens of cerebrospinal fluid during the first year of observation. Two severe neurological Herxheimer reactions were seen. It is believed that the combination of penicillin and fever therapy is superior to chemotherapy with metals and fever therapy.

[Many authorities believe that it is unnecessary to add fever therapy to penicillin as the therapeutic effect is similar and the mortality rate due to treatment is higher when fever is induced.] *G. W. Csonka*

Aureomycin : A New Treatment for Syphilis ? WILLCOX, R. R. (1949). *Brit. med. J.*, **2**, 1076.

Nine Negro patients with early syphilis were given aureomycin in small doses of 750 to 1,500 mg. over 24 to

48 hours. Each case was dark-field-positive before treatment; in six no treponemes were found 24 hours after starting treatment and in all cases dark-field examination gave negative results after 48 hours. Healing of lesions was rapid, especially in cases of secondary syphilis. The maximum period of follow-up was 17 days, and in one case (in a woman with secondary syphilis) relapse occurred on the twelfth day. The author concludes that aureomycin has a marked action on human syphilis and refers to other publications which indicate its efficacy in gonorrhoea, granuloma inguinale, and lymphogranuloma venereum.

[More extensive trials in the United States have indicated that aureomycin may offer an effective means of oral prophylaxis and therapy for these diseases; unfortunately, a risk of drug resistance is reported.]

S. M. Laird

The Treatment of Syphilis with Arsenoxides. (Die Behandlung der Syphilis mit Arsenoxyden.) SCHÖNFELD, W. (1949). *Wien. med. Wschr.*, **99**, 479.

The effect of four different arsenoxide preparations in early syphilis is described. The clinical impression was that *meta*-amino-*p*-hydroxyphenyl-arsenoxide was the most effective preparation tried. It is not thought to be superior to neoarsphenamine, and is preferably given with bismuth and penicillin. During the course, consisting of 1,200 mg. given over 7½ weeks, only minor toxic effects were noted. *G. W. Csonka*

The Treatment of Syphilitic Aortitis with Mercuric Cyanide over a Long Period. (Le traitement de l'aortite syphilitique par le cyanure de mercure en cures très prolongées.) GERBAUX, A. (1949). *Sem. Hôp. Paris*, **25**, 3125.

Results of treatment of 73 patients with syphilitic aortitis with mercuric cyanide are reported; 22 had angina and 34 had symptoms of cardiac insufficiency. Many of the cases were treated and followed up for long periods. Symptomatic improvement was apparently significantly better, and the mortality rate less, than with arsenic-bismuth treatment. Toxic effects were not important. The author states that, for best results, the mercuric cyanide should be given in courses of 50 to 100 daily intravenous injections (150 to 200 at the start) with intervals between courses of one month in the period of attack and 2 or 3 months later. Treatment must be long continued. Short notes are given on all the cases.

James Marshall

Neurosyphilis Treated with Penicillin. Report of 140 Cases. GOLDMAN, D. (1949). *J. Amer. med. Ass.*, **141**, 431.

A series of 140 cases of severe neurosyphilis, in which the colloidal gold reaction was of paretic type, were treated with penicillin, alone or in conjunction with fever or bismuth. The details of treatment, and the results as judged 2 or more years later, are reported. The patients were divided into six groups and received the following treatment: (1) Intramuscular injection of penicillin combined with fever therapy (eleven cases).

Total amounts of penicillin (1.5 to 2 mega units) were given in two courses, with fever above 105° F. (40.6° C.) for 2 to 3 hours at a time to a total of 30 hours. (2) Intramuscular and intraspinal injection of penicillin (45 cases). The average total intramuscular dose was 2.5 mega units and the intraspinal dosage was 10,000 units each day for 2 days, then 20,000 units each day for 9 days; total penicillin 200,000 units in 11 days. The author considers it important to dilute the penicillin for intraspinal injection so that the concentration is not greater than 1,000 units per ml. He effects final dilution by withdrawing spinal fluid into the syringe. (3) Intraspinal injection of penicillin alone, in the dosage given above (ten cases). (4) Intramuscular injection of penicillin combined with fever therapy and intraspinal penicillin (32 cases). A total of approximately 4 mega units of penicillin was given in each case. (5) Intramuscular calcium or procaine penicillin in oil and wax, 300,000 units once daily (total 3.6 mega units) combined with intraspinal penicillin and fever (seventeen cases). (6) Intramuscular penicillin in oil and wax, intraspinal penicillin, and fever as in group 5, followed by intramuscular injections of 0.2 g. of bismuth sodium thioglycollate twice a week for 10 weeks, repeated after an interval of 4 to 6 weeks (25 cases). The results in each group after 2 or more years are given in the following table, the most favourable results being obtained in group 6:

Treatment Group	Patients out of Hospital		Patients in Hospital			Died within Two Years	Totals
	Recovered	Much Improved	Much Improved	Slightly Improved	Unimproved		
(1)	5	2	1	1	1	1	11
(2)	8	10	3	7	4	13	45
(3)	3	10	3	8	3	5	32
(4)	0	6	1	1	0	2	10
(5)	1	4	4	4	2	2	17
(6)	4	6	4	4	4	3	25
Totals ..	21	38	16	25	14	26	140

The state of the blood and cerebrospinal fluid in 88 patients at the end of one year is reported. The author believes that the cell count and protein content of the fluid are so susceptible to even inadequate treatment that they should not be accepted, as they commonly are, as a guide to therapeutic results. Psychological tests (Wechsler-Bellevue intelligence test) were carried out on 36 patients at the end of one year and showed that the greatest improvement occurred after 6 months from the end of treatment. The results obtained with these tests suggest that they are probably of more value in assessing the progress of a patient with dementia paralytica than are the customary laboratory tests.

V. E. Lloyd

SYPHILIS (Pathology)

Results of Repeated Employment of "Luotest". (Erfahrungen mit der Luotestwiederholungsimpfung.) GRILLMAYR, W. (1949). *Wien. med. Wschr.*, **99**, 486.

The Viennese preparation "luotest" [which is an extract of syphilitic rabbit testicle and is used in intradermal skin testing in late syphilis] was tried in 120 patients in a Ceylon hospital. The skin test was repeated on the sixth day if the result of the first test was either negative or doubtful. Positive reactions were obtained in 54 cases, most of which proved to be cases of late syphilis, but in ten of those showing positive "luotest" reactions the diagnosis of "focal syphilis" was made, all other tests and examination for syphilis being negative. Cases responded, however, to antisyphilitic treatment. In all non-syphilitic patients both the first and the repeat test gave negative results. The theoretical basis of this test as elaborated by Rottmann is given. The preparation is considered to be highly specific.

G. W. Csonka

Experience with a New Rapid Test for the Diagnosis of Syphilis. (Erfahrungen mit dem neuen "Lues-Schnelltest" der Behringwerke.) ROEMER, G. B., and GREULICH, E. (1949). *Dtsch. med. Wschr.*, **3**, 1005.

A slide-test for the diagnosis of syphilis similar to the Ide test is described and compared with the Wassermann reaction and three flocculation tests. The procedure takes only 5 minutes and is applicable to serum, whole blood, and cerebrospinal fluid. The sensitivity is midway between those of complement-fixation and flocculation tests. The number of "doubtful" results was high and the test is not recommended as a basis of serological diagnosis but rather as a convenient screening procedure.

G. W. Csonka

Studies on the Cultivation of *Treponema pallidum*.

BOAK, R. A., FAWCETT, M. L., and CARPENTER, C. M. (1949). *Amer. J. Syph.*, **33**, 409.

Motile spirochaetes were observed in cultures from 21 testicular syphilomata, produced in rabbits by the intratesticular inoculation of six different strains of organism. The medium used was Brewer's modified thioglycollate with 10 per cent. inactivated goose- or beef-serum. Spirochaetes were present in original cultures for from 34 to 97 days. In one series of first, second, and third subcultures (Nichols's strain) motile organisms were seen for 87, 23, and 11 days respectively. Of 24 amino-acids, certain of their optical isomers, and six related substances added to the basal medium in 0.1 per cent. concentration, betaine, citrulline, creatinine, and DL-ornithine were the most beneficial for the maintenance of motility. The addition of eight fatty acids (in concentrations of 0.005 and 0.01 per cent.) and the growth factors choline chloride, folic acid, glutathione, and pyridoxine (in concentrations of 0.1 per cent.) to the basal medium with 10 per cent. inactivated beef serum did not increase the number of motile spirochaetes.

James Marshall

**Syphilis of the Stomach and the Stomach in Syphilis :
A Review of the Literature with Particular Reference
to Gross Pathology and Gastroscopic Diagnosis.**
PALMER, E. D. (1949). *Amer. J. Syph.*, 33, 481.

In early syphilis there may occur a superficial gastritis or, more rarely, an interstitial infiltration of the gastric submucosa and muscularis. Gastric syphilis is a rather diffuse disease and one can only speak of location in respect of the most prominent part of the lesion which, in most cases, is near the pylorus, the pars media being less commonly involved and the pars cardiaca rarely. Infiltrative, ulcerative, and tumour-forming varieties have been described and gross deformities of gastric configuration may be produced. Mucosal polyps, generally considered to be specific, may occur with gastric syphilis and there is a tendency towards suppression of gastric secretory activity at all stages. [A very useful review.]

James Marshall

Experimental Syphilis in the Golden Hamster. JOHNSON, S. A. M. (1949). *Arch. Derm. Syph.*, Chicago, 60, 190.

The Treatment of Gonorrhea with Chloramphenicol. CHEN, C. H., DIENST, R. B., and GREENBLATT, R. B. (1949). *Sth. med. J.*, 42, 986.

Chloramphenicol and aureomycin are two new antibiotics which have been used extensively in the treatment of various infections by pathogenic micro-organisms. Both are effective when taken by mouth, and as the action of aureomycin in gonorrhœa had been found to be satisfactory, the authors decided to try chloramphenicol. Tests *in vitro* showed that the smallest dose of chloramphenicol needed to inhibit the growth of gonococci was 0.5 µg. per ml. of medium. Therapeutic trials of chloramphenicol were then carried out on 24 patients with acute gonorrhœal urethritis; of fourteen who were given a total dose of 6 g. in 2 days, thirteen were cured, whereas of ten given only 3 g. only seven were cured. These results showed chloramphenicol to be rather more effective than penicillin, and less effective than aureomycin, in the treatment of gonorrhœa. However, while the last two drugs may give rise to dermatitis and gastro-intestinal disturbances respectively, no toxic reactions were encountered with chloramphenicol. The latter can be synthesized chemically on a commercial scale, and thus has another advantage over aureomycin.

T. E. C. Early

GONORRHŒA (Therapy)

Optimal Methods in the Treatment of Ophthalmia Neonatorum. SORSBY, A., and KANE, I. (1949). *Brit. med. J.*, 2, 562.

The senior author has previously reported a series of 333 cases of ophthalmia neonatorum treated with sulphonamides, and another of 143 cases treated intensively with penicillin. In 16.3 per cent. of the former and 23.1 per cent. of the latter group a relatively poor response was obtained or relapse occurred.

The present paper reports the results in a further 151 cases in which various more intensive schemes of therapy were adopted: (1) Penicillin by mouth, alone or combined with intramuscular injection, gave poor results in thirty cases (fifteen relapses) and the method was abandoned. (2) In 57 cases sulphamezathine was given orally, 0.5 g. initially and 0.25 g. 6-hourly thereafter. The relapse rate was unaffected. (3) Combined use of sulphamezathine orally and penicillin locally in forty cases had no significant effect on the relapse rate. (4) Twenty-four cases were treated with sulphamerazine orally, 0.5 g. initially, then 0.25 g. 8-hourly. There were no unsatisfactory responses or relapses.

A number of conclusions are drawn: (1) The intensive use of penicillin locally at one-minute intervals remains the best mode of applying penicillin in ophthalmia neonatorum. (2) Sulphonamides, in higher dosage than previously employed, produce a rapid response. (3) The results in the small series treated with sulphamerazine suggests that unsatisfactory responses and relapses may be controlled with this drug, but further trials will be necessary to prove that this is so. (4) Analysis of the failures shows that they are not related to the degree of severity of the affection. Cases with inclusion bodies are the most resistant to treatment. The routine procedure for treatment with oral sulphonamides and local penicillin is given in detail.

S. J. H. Miller

Delayed Administration of Oral Penicillin as Prophylaxis for Gonorrhea. CAMPBELL, V. W. H., DOUGHERTY, W. J., and CURTIS, C. E. (1949). *Amer. J. Syph.*, 33, 437.

An experiment was carried out among members of a naval force operating in an area where the incidence of venereal disease was high. Test subjects (1,059) were given 200,000 units of sodium penicillin G orally the morning after return from a day's leave, an average of 15 hours after exposure, while controls (1,021) received a placebo. (Unfortunately, "station prophylaxis" was also used.) The incidence of gonorrhœa in the control group was 11.6 per 1,000 liberties in which exposure occurred, that in the treated group only 4.7. The longer the interval between exposure and administration of penicillin, the less the efficacy of the treatment. No conclusions could be drawn about prophylaxis against or masking of syphilis. There were no reactions to the penicillin.

James Marshall

Oral Administration of Aureomycin in the Treatment of Gonorrhea. CHEN, C. H., DIENST, R. B., and GREENBLATT, R. B. (1949). *Urol. cutan. Rev.*, 53, 394.

Aureomycin was given by mouth to twenty patients (seventeen males and three females) suffering from gonorrhœa of 1 day to 2 weeks' duration in doses of 1 g. three times a day for 2 days; all were cured and in several cases all symptoms subsided after 2 to 3 g. had been taken; two had been unsuccessfully treated a week previously with a single injection of 300,000 units of penicillin G in oil and wax. It is of interest to note that in seven cases there was no complaint of urethral dis-

charge or pain on the part of the patient. In all cases gonococci were demonstrated by culture, and in thirteen by smear, before treatment. Tests of cure consisted of urine culture for males and cervical culture for females one week after treatment [not a very high standard]. Of a comparable group of twenty patients treated by a single injection of 300,000 units of penicillin G in oil and wax, eighteen were cured; the remaining two were later cured after taking 6 g. of aureomycin in 2 days. An interesting case is described in some detail in which 6,000,000 units of penicillin in oil and wax, given in doses of 300,000 units over a period of 5 months, failed to effect a cure; in this case also aureomycin was later effective. No serious toxic effects of aureomycin were noted, three patients only complaining of nausea or vomiting. Several therapeutic agents have been reported as being effective against two or three of the chief venereal diseases but it appears that aureomycin is effective against all five—lymphogranuloma venereum, granuloma inguinale, chancroid, gonorrhoea, and syphilis. It may be that aureomycin will prove an effective and practicable oral prophylactic for all venereal diseases.

T. E. Osmond

Urethritis, Gonococcal and Non-Specific, Treated by Aureomycin. WILLCOX, R. R. (1949). *Brit. med. J.*, 2, 257.

Four cases of non-specific urethritis in men were treated with aureomycin by mouth. The first patient received 2,000 mg. in individual doses of 250 mg., spread over 60 hours. The discharge ceased on the second day. There was some headache and diarrhoea on the third day. Three additional cases were treated with 1,000 mg. spread over 24 hours. One case was apparently cured, one unimproved, and one successfully re-treated with the same amount of aureomycin 7 days after initial failure. In three of these cases pleuropneumonia-like organisms had been found before aureomycin therapy, but were not found subsequently.

In two cases gonococcal urethritis responded successfully to oral administration of aureomycin, a total of 2,000 mg. over 52 hours being given in one case, and 1,000 mg. in 20 hours in the other.

V. E. Lloyd

Preliminary Report on the Use of Chloramphenicol (Chloromycetin) in the Treatment of Acute Gonorrheal Urethritis. SMADEL, J. E., BAILEY, C. A., and MANKIKAR, D. S. (1949). *J. clin. Invest.*, 28, Part I, 964.

These authors treated 48 patients suffering from acute gonorrheal urethritis with chloramphenicol; 24 were given a single dose of 3 to 3.5 g. and eighteen one of 1 to 1.5 g. of the synthetic drug; the remaining six were given 3 to 3.5 g. of the fermentation type. The average duration of the disease before treatment in the three groups was 8, 4, and 11 days respectively; all patients responded in a similar way, so that dosage and type of drug appeared to make no difference. Most cases responded well, signs and symptoms clearing within 2 days. Prostatic secretion from eighteen patients was examined on the 3rd to 5th day after treatment; in no

case were gonococci found in smears but in one an organism resembling the gonococcus was found on culture. Relapses occurred in ten patients during the first month of observation but responded well to a further single dose of 3 g.

Two patients with primary syphilitic chancres were also treated with chloramphenicol. The first received 9.5 g. in 2 days; spirochaetes disappeared slowly, and the lesion healed in 10 days but a second chancre on the same site appeared during the 4th week and the Kahn reaction changed from negative to doubtful on the 44th day (presumably a relapse). The second received 5.5 g. in 18 hours; spirochaetes disappeared in 17 hours and lesions healed in 12 days, but a local relapse occurred 30 days later.

Nine patients with acute gonorrhoea were treated with a single oral dose of 3 to 4.25 g. of aureomycin; all did well and no relapses were seen during an observation period of 28 days. [This does not seem to have any bearing on the above investigation.]

[The object of this investigation was to discover whether chloramphenicol was as effective against gonorrhoea as penicillin, without having such a masking effect on syphilis. It seems that the former is reasonably effective against gonorrhoea and would have probably had little effect on syphilis if it had been given in the same dosage, since approximately double or treble the dose given in gonorrhoea failed to cure early syphilis.]

T. E. Osmond

Prevention of Gonorrhea with Penicillin Tablets. EAGLE, H., GUDE, A. V., BECKMANN, G. E., MAST, G., SAPERO, J. J., and SHINDELECKER, J. B. (1949). *J. Amer. med. Ass.*, 140, 940.

In experimental infection the amount of penicillin necessary for cure increases with the number of organisms inoculated and with the period which elapses between inoculation and commencement of treatment. It seemed likely therefore that a small amount of penicillin taken within a relatively short time after exposure to infection would abort gonorrhoea. Two groups of service personnel were selected, one being given a single tablet of penicillin containing 100,000 units approximately 2 hours after possible exposure and the other a similar tablet containing no penicillin. In the experimental group, varying in size from 151 to 213 men, there were five cases of gonorrhoea in 3,218 liberties (short leaves) equivalent to 1.8 per 1,000 liberties and 105 per thousand men per annum; in a control group of 176 to 195 men who received a "placebo" tablet there were 43 cases in 3,616 liberties, equivalent to 11.9 per 1,000 liberties and 508 per 1,000 men per annum. In a second experiment the content of the penicillin tablet was increased to 250,000 units, with the result that in the experimental group there was one doubtful case of gonorrhoea in 569 liberties. In a third experiment when penicillin tablets were taken voluntarily one doubtful case occurred in 1,454 liberties, as against an expectation of at least thirteen. Four complications might possibly arise: (1) sensitization; (2) creation of drug-fast strains of gonococci; (3) suppression of a concomitant syphilitic

infection; and (4) an effect on the flora of the mouth and intestine. None of the first three was noted and the fourth remains to be determined. It is considered that the above constitutes an easily applied and effective method of aborting gonorrhœa, and possibly also syphilis, and that there seem to be few, if any, objections to it.

T. E. Osmond

The Treatment of Gonorrheal Arthritis with Penicillin.

SPITZER, N., and STEINBROCKER, O. (1949). *Amer. J. med. Sci.*, **218**, 138.

At Bellevue Hospital, New York, twenty-eight patients with gonorrheal arthritis received 0.5 million to 7 million units of penicillin as the basic treatment over a period of 3 to 30 days. In each case a bacteriological cure was effected of the extra-articular focus of infection, such as the urethra or cervix, but the arthritis was not improved in five patients; it was, however, greatly improved in fifteen and cured in eight. Those cured had complete restoration of joint function; in those greatly improved, fever and inflammation quickly subsided and only slightly limited movement or tenderness remained; in the cases of failure there was residual deformity or no apparent improvement.

Because penicillin destroys gonococci so rapidly, prolonged immobilization should be replaced by increasing amounts of exercise and physical therapy to preserve joint function and to prevent disability. These results imply that penicillin administration supplemented by earlier physiotherapy and joint movement is at least as effective as, or better than, sulphonamide or fever therapy, and far superior to treatment given before the sulphonamide era.

T. Anwyl-Davies

CHEMOTHERAPY

The Comparative Merits of Sodium and Procaine Penicillin

Given Infrequently. GRIFFITHS, E., JONES, P. F., SHOOTER, R. A., and HEADY, J. A. (1949). *Brit. med. J.*, **2**, 958.

This paper reports the results of a clinical investigation in which 232 patients with acute septic conditions of the skin and subcutaneous tissues were treated with penicillin by two different methods. The first group of 116 patients received a single daily intramuscular injection of 300,000 units of procaine penicillin in arachis oil, the intention being to maintain a low concentration of penicillin in the blood throughout most of each 24-hour period. The second group of 116 patients received two intramuscular injections of 300,000 units of sodium penicillin in saline each day, the intention being to produce a high blood penicillin level twice a day, with intervening periods totalling 8 to 14 hours during which no penicillin would be detectable in the blood. The local treatment followed exactly the same lines in both groups. In 193 cases *Staphylococcus pyogenes* was isolated and thirteen of these strains were penicillin-resistant. Gram-negative bacilli were present in eight, and hæmolytic streptococci

in eleven of the remaining cases. [Twenty cases appear to be unaccounted for.] The results were treated statistically and no significant difference was found between the two groups in respect of mean time between start of treatment and relief of pain and mean healing time. An additional group of 24 patients were treated with injections of 300,000 units of procaine penicillin in arachis oil with 2 per cent. aluminium stearate, given every 2 days, but the clinical response is stated to have been unsatisfactory.

A. W. H. Foxell

Procaine Penicillin G for Aqueous Injection. A Study of Blood and Urine Levels. PULASKI, E. J., and CONNELL, J. F. (1949). *New Engl. J. Med.*, **241**, 514.

The authors, working at Brooke Army Medical Centre, Texas, U.S.A., examined the penicillin concentration in plasma and urine after the intramuscular injection of an aqueous solution of procaine penicillin G. The preparation used, "crysticillin", is a mixture of dry crystalline penicillin with dried sodium carboxymethylcellulose which, when diluted with water, gives a stable suspension and obviates the use of oils.

With doses of 4,000 units per kg. body weight, assayable levels were detectable in the blood and urine in seven young male adults at 18 and 36 hours after injection. The dose was repeated in four patients after 8 hours and assayable levels were present in the blood at 26 hours, and in the urine at 50 hours after the first injection. In four patients who received a second dose of 4,000 units after 12 hours, assayable levels were present in the blood 24 hours and, in two out of the four, 36 hours after the first injection, the urine still containing penicillin after 48 hours. After a single dose of 10,000 units (in five patients), 12,000 units (in four patients) and 16,000 units (in five patients) per kg. assayable levels of penicillin were detectable in the blood for 36 hours and in the urine for 48 hours.

Malcolm Woodbine

OTHER VENEREAL DISEASE CONDITIONS

Aureomycin in the Treatment of Granuloma Inguinale.

ROBINSON, R. C. V., ELMENDORF, DUM. F., and ZHEUTLIN, H. E. C. (1949). *Amer. J. Syph.*, **33**, 389.

Streptomycin is effective in the great majority of cases of granuloma inguinale and is comparatively free from toxic effects during the short period of administration required for treatment of this disease. The authors have found that treatment by intramuscular injections of 20 mg. of aureomycin daily for from 23 to 31 days, or 40 mg. thrice daily for 5 days, is less effective than with streptomycin and that the severe pain of the injection is a contraindication to its routine use. Oral aureomycin in total dosage of 4.2 to 40 g. gave an initially satisfactory clinical response in 27 out of 36 patients treated, but although the lesions healed temporarily there was no demonstrable effect on the causative organism.

G. L. M. McElligott

Bubonic Form of Lymphogranuloma Venereum Cured Spectacularly by Oral Administration of Aureomycin.

(Maladie de Nicolas-Favre à forme bubonique guérie spectaculairement par l'aureomycine donnée par voie orale.) BENHAMOU, E., DESTAING, F., GAUTHIER, J., and SORREL, G. (1949). *Bull. Soc. méd. Hôp. Paris.*, **65**, 832.

The diagnosis in this case of lymphogranuloma venereum in a man of 28 years was confirmed by a positive Frei test and the finding of Miyagawa bodies in the large histiocytes of glandular fluid. Electrophoresis showed marked increase of β - and γ -globulins. Neither the clinical nor the pathological findings were affected by sulphamide treatment, but oral aureomycin, 0.75 g. every 8 hours, caused complete disappearance of the clinical signs of disease in 6 days. The cure was confirmed by repetition of the pathological tests.

James Marshall

Aureomycin in Granuloma Inguinale. HILL, L. M., WRIGHT, L. T., PRIGOT, A., and LOGAN, M. A. (1949). *J. Amer. med. Ass.*, **141**, 1047.

Three cases of granuloma inguinale, previously reported as treated successfully with aureomycin, have now been observed for 5 to 6 months; their condition has remained satisfactory. A further nine patients have since been treated. All were Negroes, aged 26 to 49 years, and four were males, the disease having been present for from 10 days to 16 years. Three had positive Kahn reactions due to concomitant syphilis and two had positive Frei reactions. They were treated with aureomycin on widely differing schedules, variations and combinations of the oral, intramuscular, and intravenous routes being used over periods varying from 13 to 62 days and the total dosage varying between 2.1 and 55.8 mg.

Donovan bodies were found before treatment but biopsy examination was not carried out after treatment. All but one patient received some of the drug (7.5 to 55.8 g.) orally, three had some (0.6 to 1.3 g.) intramuscularly, and six had some (0.8 to 3 g.) intravenously. The lesions all healed in 13 to 64 days, in three instances in under 3 weeks and in six in under one month. No severe toxic effects were noted.

It is categorically stated that granuloma inguinale responds to aureomycin irrespective of the method of administration. The authors have given aureomycin intravenously, 1 g. being diluted in 500 ml. of 5 per cent. dextrose in water or 0.5 g. in only 20 ml. of a buffer solution containing 131 mg. of L-leucine per 5 ml. of diluent, 10 minutes being taken over the injection. There were three cases of phlebitis out of 50 treated by the intravenous route.

R. R. Willcox

Oral Aureomycin in the Therapy of Granuloma Inguinale.

GREENBLATT, R. B., WAMMOCK, V. S., WEST, R. M., DIENST, R. B., and CHEN, C. H. (1949). *Amer. J. Syph.*, **33**, 593.

Aureomycin was given by mouth in the treatment of sixteen cases of granulomata inguinale, with excellent results. The total dosage given ranged widely from 5 to

70 g., but it was found that less than 26 g. was not effective. Patients receiving more than 25 g. in 20 to 35 days responded favourably. Intramuscular injection of aureomycin in two cases (total dose 1,020 and 1,500 mg respectively) failed to cure the condition. Donovan bodies disappeared slowly from the lesions and were still found in some cases when the superficial tissues showed healing. The average time for the healing of lesions was 11 days after the end of treatment. Aureomycin is considered to be remarkably effective in granuloma inguinale and was found to be equally potent in cases previously found resistant to streptomycin.

V. E. Lloyd

A Study of Nonspecific Urethritis in British Soldiery.

WILLCOX, R. R. (1949). *J. vener. Dis. Inform.*, **30**, 243.

This article contains such a mass of detail that little more than a summary of the findings can be given in an abstract. The author studied 86 patients, all soldiers, suffering from non-specific urethritis; fifty patients suffering from various dermatological conditions were used as controls. From the test group were excluded all cases where the condition was due to chemical irritation, crystalluria, prostatorrhœa, infection with trichomonads, spirochaetes, or amœbae, trauma, intra-urethral sores, foreign bodies, tumours, long-standing gonorrhœa, and stricture. The two groups, test and control, were investigated from the point of view of habits, including personal background, previous history (urological, allergic, and psychological factors), and sex habits, and from the clinical side. For the clinical study 136 cases of urethritis were employed. The first part of the investigation showed that the patients with urethritis were definitely more active sexually than those with skin lesions, 52.3 per cent. having had previous venereal disease compared with 8 per cent. of the controls; they were also more unstable psychologically. Neither group indulged to any great extent in contraceptive or prophylactic practices.

In the 136 patients with urethritis, the incubation period ranged from 4 to 21 days; sulphonamides, especially sulphanilamide, proved fairly effective in treatment and their value was enhanced by the employment of concurrent irrigations or fever therapy (induced by intravenous T.A.B. vaccine); cystoscopy revealed little of note [urethroscopy would appear to have been more suitable] and intra-urethral injection of patients' citrated whole blood failed to cause any discharge. Of the 136 patients 63 were apparently cured in one week or less and 113 in less than 2 weeks; only eleven required more than 3 weeks for cure; 46 required re-treatment.

T. E. Osmond

Investigation of 120 Children Born of Mothers Infected with Lymphogranuloma Inguinale. (In English.)

SONCK, C. E. (1949). *Acta derm.-venereol., Stockh.*, **29**, Suppl. 23.

The author has attempted to ascertain whether the finding of Hellendall that lymphogranuloma venereum virus is transmitted in pregnant mice via the placenta to the foetus also applies to human beings. In a survey of

the literature he found a total of 80 mothers suffering from lymphogranuloma venereum during pregnancy who were reported to have given birth to 70 healthy children. In addition, he has investigated 124 children born of 70 lymphogranulomatous mothers in Finland. He has grouped them into 3 groups: 8 children born of mothers who had acute lymphogranuloma venereum during pregnancy; 61 children born of mothers who were in the chronic phase of the disease; and 33 children born of mothers who were symptom free but had had the disease in the past. (To these are added 8 doubtful cases in which the time of infection was unknown, and 14 children who died before examination.) None of the 102 children showed any symptoms of lymphogranuloma venereum and the Frei test, carried out on 90 of them, was negative in 88. From the cases published in the literature and his own clinical observations the author concludes that transmission of lymphogranuloma venereum from mother to child through the placenta is improbable, or at least very rare, in human beings; nor can he find a single case in the literature in which such transmission has been completely proved.

T. Anwyl-Davies

Use of Polymyxin in Gram Negative Urinary Tract Infections. PULASKI, E. J., and ROSENBERG, M. L. (1949). *J. Urol.*, 62, 564.

This paper records the results of treatment in a series of 31 cases of urinary-tract infection with polymyxins B and E [which patients received which type of polymyxin is not stated]. Sensitivity tests were carried out on 78 strains of 10 Gram-negative organisms against polymyxin B. There was marked inhibition of *Pseudomonas*, *Salmonella*, *Shigella*, *Klebsiella*, and the coli-aerogenes group; *Brucella* and some strains of *Staphylococcus* were moderately sensitive, while β -hæmolytic streptococci and *Proteus* were resistant. The sensitive organisms were inhibited by 0.06 to 3.1 μ g. per ml., whereas over 100 μ g. per ml. was required to inhibit five strains of *Proteus*.

Before injection the drugs were diluted with 1 per cent. procaine so that each ml. contained 25 or 50 mg. They were injected deep into the gluteal or deltoid muscles. The dose varied between 2 and 5.6 mg. per kg. of body weight per 24 hours (average 2.5 mg. per kg.), the average total dose being 10 mg. per kg. Six-hourly injection was considered as satisfactory as 4-hourly.

In seventeen cases there was unequivocal improvement with elimination of the organisms at 48 hours; doubtful results were obtained in seven cases with no improvement in symptoms despite a sterile culture, or with a recurrence of infection; in five cases there was failure. No drug-sensitivity reactions were seen and evidence of temporary renal damage was only found when the dosage exceeded 3 mg. per kg. Mild neurotoxic phenomena (paræsthesiæ, dizziness, and weakness) were observed in practically every case, but they always disappeared within 24 hours of completion of the course and were never severe enough to warrant cessation of therapy.

A. W. H. Foxell

Aureomycin: A Clinical and Laboratory Study of its Effect in Urinary Infections. CARROLL, G., ALLEN, H. N., and FLYNN, H. (1949). *J. Urol.*, 62, 574.

Following the finding that 44 per cent. of 150 organisms isolated from patients with urinary infections were resistant to streptomycin, 72 strains of Gram-negative organisms from 62 patients were tested for aureomycin sensitivity. Infections with organisms of the coli-aerogenes group (with *in vitro* sensitivity to 0.02 to 0.6 μ g. per ml.) responded well; infections due to *Pseudomonas* and *Proteus* (*in vitro* sensitivity 2.5 μ g. per ml. or more) were resistant to treatment. An increase in resistance was observed in only one instance, in a case of infection due to *Escherichia intermedium* [no details are given]. The dosage was 0.5 g. of aureomycin by mouth every 6 hours.

No serious toxic effects were noticed, but nausea occurred in a high percentage of cases and was relieved by the administration of aluminium acetate hydroxide with each dose of aureomycin. Diarrhœa was noted by 25 per cent. of the patients.

A. W. H. Foxell

Chloromycetin in the Successful Treatment of Recurring Epididymitis. REDEWILL, F. H. (1949). *J. Urol.*, 62, 581.

Of the five cases of epididymitis reported, one appeared as a complication of mumps and the other four followed a "strain". The latter type of case occurs when there is infection of the urinary tract, the "strain" forcing infected urine from a partially filled bladder into the seminal vesicles and epididymes. Infection can be demonstrated by injection of "diodrast" into the ejaculatory ducts with the aid of a Redewill cystoscope. In three of the cases the condition was due to mixed infection with *Bacterium coli*, Friedländer's bacillus, and *Proteus*; in one case it was due to gonococcal infection; and in one to a "coccal and staphylococcal infection". All five patients were treated with chloramphenicol, the last patient being given penicillin as well. The dosage of chloramphenicol consisted of an initial 3 to 4 g. by mouth, divided into hourly doses of 1 g., followed by 0.25 to 0.5 g. 3-hourly. All five cases responded well within 26 to 60 hours.

A. W. H. Foxell

The Treatment of Thoracic and Abdominal Aneurysms of Syphilitic and Arteriosclerotic Origin. BERMAN, J. K., BOYD, F. J., and SAINT, W. K. (1949). *J. Indiana med. Ass.*, 42, 889.

In this paper the technique is described of an experimental method aimed at securing fibrosis of the wall of an aneurysm with gradual constriction of the lumen. A 0.9 per cent. solution of dicetyl phosphate in olive oil was injected round the thoracic and abdominal aorta in dogs. In 30 days the lumen had been much reduced owing to the great amount of fibrous proliferation that had taken place round the vessel. [It is proposed to use this method in the treatment of human aneurysms; the results will be awaited with interest.]

C. W. C. Bain